

REMARKS

Applicants express their disappointment over the Examiner's withdrawal from allowance of claims 12, 13, 14, 15, 17 and 18, particularly since the renewed rejection is based upon a reference that was considered already and deemed to have been overcome.

The undersigned is grateful to the Examiner for returning his phone call on November 8, 2006. The Examiner advised that unfortunately he was unable to discuss the case at that time. In the event that, following this Amendment, the Examiner has a suggestion as to additional wording that might help clarify the claims, the undersigned would welcome the opportunity to discuss any suggestion, and encourages the Examiner to contact him at (248) 813-1210.

Claim 14 is amended to recite that the laser line is projected onto adjoined substrates and that the laser line intersects at least one joint of the adjoined substrates, features that were previously included in claim 11 but omitted when the dependent claim 14 was rewritten in independent form. Further, claim 14 is amended to more particularly point out that the alignment is verified by determining whether the line projected on one substrate is shifted relative to the line projected on the other substrate as viewed by the viewing source, as described in paragraph 0033.

Claim 15 is amended similar to claim 14.

Claim Rejection under 35 USC § 112

Claim 13 was rejected under 35 USC § 112 as indefinite as failing to provide a proper antecedent basis for the recited joint. Claim 13 is dependent upon claim 14.

Claim 14 has been amended to call for at least one joint, thereby providing an antecedent for the reference in claim 13. Accordingly, it is respectfully requested that the rejection be withdrawn and claim 13 be allowed.

Claim Rejection based upon Hara et al.

Claims 12, 14, 15, 17 and 18 were rejected under 35 U.S.C. § 102(b) as anticipated by United States Patent No. 6,141,863, issued to Hara et al. in 2000.

Applicants' invention includes aligning one substrate relative to another substrate prior to stuffing both substrates into a housing. To this end, Applicants' method comprises projecting a laser line onto a side of the substrates when the substrates are adjoined, and verifying the alignment by determining whether the line projected onto one substrate is shifted relative to the line projected onto the other substrate. Hara et al. describes a method for assembling a fit-in workpiece 7 to a receiving workpiece 8, see col. 2, lines 56-60, and col. 4, lines 12-17. The rejection points to elements 71 and 72. Convex portion 71 and bottom face 72 are surfaces of the fit-in workpiece 7, which is an integral element. There is no need, and Hara et al. does not contemplate, checking the alignment of portion 71 relative to face 72, since that was determined when workpiece 7 was manufactured.

The rejection also points to text of Hara et al. that describes alignment of convex portion 71 of workpiece 7 relative to concave portion 81 of receiving workpiece 8.

However, in Hara et al., this alignment occurs before the fit-in workpiece 7 is inserted into the receiving workpiece 8. Thus, the workpieces are not contiguous and so are not adjoined, and there is no joint between them when the alignment is checked. In contrast, Applicants' invention as set forth in claims 14 and 15 calls for projecting a laser line onto two substrates that are adjoined. It is noted that, in Hara et al., surface 81 is not visible after the insertion step, and so surface 81 cannot be used to check the alignment after the workpieces are adjoined. Furthermore, in Applicants' method, the substrates are aligned in order to allow them to be stuffed into a housing. Nothing in Hara et al. shows the step of stuffing the workpieces into a housing, or verifying their alignment to facilitate such stuffing operation. For these reasons, Hara et al. does not teach or suggest a method in which the alignment of two substrates is verified before they are stuffed into a housing, features of Applicants' invention in accordance with claim 14.

The rejection also points to the monitor display in Hara et al. as corresponding to the viewing source in Applicants' method. As described in paragraph 0032, the viewing source refers to an eye or sensor that senses the reflected laser light. Hara et al. does not specify the location of the sensor, except to say at col. 11, lines 64-66, that it is a camera that is part of the structured light unit, in which case it is located at an angle near 0 degrees. In Applicants' method, the angle between the laser line generator and the viewing source is 40° to 50°, and more preferably between 42° and 45°. The location of the display monitor is not relevant to either the method of Hara et al. or the present method. Nothing in Hara et al. suggests locating the camera apart from the laser

generator, and so Hara et al. does not teach or suggest this aspect of Applicants' invention.

Claim 14 is directed to Applicants' method that includes projecting a laser line onto a side of two adjoined substrates and verifying the alignment by determining whether the line projected onto one substrate is shifted relative to the line projected onto the other substrate. If the rejection is intended on pointing to surfaces 71 and 72, these are surfaces of a single workpiece, and Hara et al. does not need or teach to verify the alignment of these two surfaces, which is fixed. If the rejection is pointing to the alignment of workpiece 7 relative to workpiece 8, this is verified in Hara et al. before the joining operation, not when they are adjoining. Further, the claim calls for verifying the alignment using a viewing source that is positioned at an angle of about 40° to about 50° relative to the laser line generator. Hara et al. shows a system in which the viewing source is located near the laser. Still further, claim 14 calls for stuffing the adjoined substrates into a housing. Nothing in Hara et al. contemplates verifying the alignment of two substrates, i.e. the two workpieces, after they are joined and before they are stuffed into a housing. Thus, Hara et al. does not teach or suggest Applicants' method in claim 14.

Claim 15 is directed to Applicants' method similar to claim 14, but calls for the laser line generator to be positioned at a preferred angle of 42° to 45° relative to the viewing source. For the reasons herein, Hara et al. does not show Applicants' method in claim 15.

Claims 12, 17 and 18 are dependent upon claim 14 and not taught or suggested at least for the reasons set forth with regard to that claim.

Accordingly, it is respectfully requested that the rejection of the claims based upon Hara et al. be reconsidered and withdrawn, and that the claims be allowed.

Rejection of claim 13 based upon Hara et al.

Claim 13 was rejected under 35 U.S.C. § 103 as unpatentable over Hara et al.

Claim 13 is dependent upon claim 14. For the reasons herein, Hara et al. does not teach or suggest Applicants' method set forth in claim 14. It follows then that it does not show Applicants' method in claim 13 that incorporates the features of claim 14.

Accordingly, it is respectfully requested that the rejection of the claim 13 based upon Hara et al. be reconsidered and withdrawn, and that the claim be allowed.

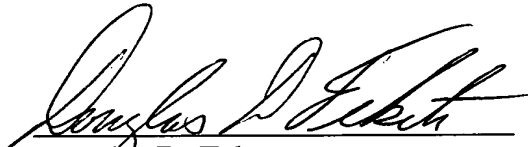
Conclusion

The remaining claims 1-10, 19 and 20 having been allowed, it is respectfully requested that the rejection of claims 12-15, 17 and 18 be withdrawn, that all claims be allowed, and that the application be allowed and the case proceed to issue.

If it would further prosecution of the application, the Examiner is urged to contact the undersigned at the phone number provided.

The Commissioner is hereby authorized to charge any fees associated with this communication to Deposit Account No. 50-0831.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Douglas D. Fekete", is written over a horizontal line.

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